

CLAIMS

- 1 1. A method comprising
2 receiving a machine readable file containing a document
3 that is to be served to a client for display on a client device, the
4 organization of each of the documents in the file being expressed
5 as a hierarchy of information, and
6 deriving subdocuments from the hierarchy of information,
7 each of the subdocuments being expressed in a format that permits
8 it to be served separately to the client using a hypertext
9 transmission protocol, at least one of the subdocuments containing
10 information that enables it to be linked to another one of the
11 subdocuments.
- 1 2. The method of claim 1 in which the language comprises
2 extensible mark-up language (XML).
- 1 3. The method of claim 1 in which the deriving comprises
2 traversing the hierarchy and assembling the subdocuments from
3 segments, at least some of the subdocuments each being assembled
4 from more than one of the segments.
- 1 4. The method of claim 3 in which the assembling conforms
2 to an algorithm that tends to balance the respective sizes of the
3 sub-documents.

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1 5. The method of claim 3 in which the assembling conforms
2 to an algorithm that tends to favor assembling each of the
3 subdocuments from segments that have common parents in the
4 hierarchy.

1 6. The method of claim 3 in which the assembling conforms
2 to an algorithm that tends to favor assembling each of the
3 subdocuments from segments for which replications of nodes in
4 the hierarchy is not required.

1 7. The method of claim 1 in which the file is received from an
2 origin server associated with the file.

1 8. The method of claim 7 in which the file is expressed in a
2 language that does not organize segments of the document in a
3 hierarchy, and the deriving of subdocuments includes first
4 converting the file to a language that organized segments of the
5 document in a hierarchy.

1 9. The method of claim 1 also including serving the
2 subdocuments to the client individually as requested by the client.

1 10. The method of claim 9 in which the subdocuments are
2 served to the client using a hypertext transmission protocol.

1 11. The method of claim 9 in which the subdocuments are
2 requested by the client based on the contained information that
3 enables it to be linked to another of the subdocuments.

1 12. The method of claim 1 also including
2 identifying a portion of the document that is to be displayed
3 separately from the rest of the document,

4 the portion of the document that is to be displayed
5 separately being excluded from the subdocument in which the
6 portion would otherwise have appeared, the portion of the
7 document that is to be displayed separately being included in at
8 least one corresponding subdocument, and

9 when the subdocument in which the portion would
10 otherwise have appeared is served to the client device, embedding
11 a graphical device that can be invoked by the user to retrieve the
12 subdocument that includes the portion of the document that is to be
13 displayed separately.

1 13. A method comprising

2 receiving, from an origin server, a machine readable file
3 containing a document that is to be served to a client for display on
4 a client device, the file being expressed in a language that does not
5 organize segments of the document in a hierarchy,

6 converting the file to a language that organizes segments of
7 the document in a hierarchy,

8 traversing the hierarchy and assembling subdocuments
9 from the segments, at least some of the subdocuments each being
10 assembled from more than one of the segments, the assembling
11 conforming to an algorithm that tends to (a) balance the respective
12 sizes of the sub-documents, (b) favor assembling each of the
13 subdocuments from segments that have common parents in the

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14 hierarchy, and (c) assembling each of the subdocuments from
15 segments for which replications of nodes in the hierarchy is not
16 required.

17 each of the subdocuments being expressed in a format that
18 permits it to be served separately to the client using a hypertext
19 transmission protocol, at least one of the subdocuments containing
20 information that enables it to be linked to another one of the
21 subdocuments, and

22 serving the subdocuments to the client individually as
23 requested by the client based on the contained information that
24 enables it to be linked to another of the subdocuments, the serving
25 being done using a hypertext transmission protocol.

1 14. A machine-readable document held on a storage medium
2 for serving to a client, the document being organized as a set of
3 subdocuments, each of the subdocuments containing information
4 that enables the subdocument to be linked to another of the
5 subdocuments, each of the subdocuments comprising an assembly
6 of segments of the document that are part of a hierarchical
7 expression of the document, the subdocuments being of
8 approximately the same size.

1 15. The document of claim 14 in which the information that
2 enables the subdocument to be linked comprises a URL.

1 16. The method of claim 14 in which the hierarchical
2 expression comprises extensible markup language (XML).

1 17. A method comprising
2 receiving from a client a request for a document to be
3 displayed on a client device,
4 serving separately to the client a subdocument that
5 represents less than all of the requested document, each
6 subdocument containing information that links it to at least one
7 other subdocument,
8 receiving from the client an invocation of the link to the
9 other subdocument, and
10 serving separately to the client device the other
11 subdocument.

1 18. The method of claim 17 in which the subdocuments are
2 served to the client using a hypertext transmission protocol.

1 19. The method of claim 17 in which the subdocuments are of
2 essentially the same length.

1 20. The method of claim 17 in which the subdocuments are of
2 a length that can be displayed on the client device without further
3 truncation.

1 21. A method comprising
2 receiving from a server at a client device, a subdocument of
3 a larger document for display on the client device,

4 displaying the subdocument on the client device,
5 receiving at the client device a request of a user to have
6 displayed another subdocument of the larger document,
7 receiving separately from the server at the client device, the
8 other subdocument, and
9 displaying the other subdocument on the client device,
10 the subdocuments being of substantially the same length.

1 22. The method of claim 21 in which the subdocuments are
2 expressed in a hypertext transmission protocol.

1 23. The method of claim 21 in which the request of the user is
2 expressed as a URL.

1 24. The method of claim 21 in which all of each of the
2 subdocuments is displayed at one time on the client device.

1 25. The method of claim 21 in which less than all of each of
2 the subdocuments is displayed on the client device at one time.

1 26. A method comprising
2 displaying a subdocument of a document on a client device,
3 displaying an icon with the subdocument, and

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4 in response to invocation of the icon, fetching another
5 subdocument of the document from a server and displaying the
6 other subdocument on the client device,

7 each of the subdocuments being less than the entire
8 document, the subdocuments being of approximately the same
9 size.

1 27. The method of claim 26 in which only a portion of each of
2 the subdocuments is displayed at one time.

1 28. The method of claim 27 also including displaying an
2 indication of the position of the currently displayed subdocument
3 in a series of subdocuments that make up the document.

1 29. The method of claim 28 in which the indication includes
2 the total number of subdocuments in the series and the position of
3 the currently displayed document in the sequence.

1 30. The method of 1, 17, or 21 in which the subdocuments are
2 derived from the document at the time of a request from the client
3 device for the document.

1 31. The method of claim 30 in which the subdocuments are
2 derived in a manner that is based on characteristics of the client
3 device.

1 32. The method of claim 31 in which the characteristics of the
2 client device are provided by the client in connection with the
3 request.

1 33. The method of claim 32 in which the characteristics include
2 the display capabilities of the client device.

1 34. The method of claim 1, 17, or 21 in which the
2 subdocuments are derived from the document before the client
3 requests the document from the server.

1 35. The method of claim 34 in which subdocuments are
2 derived for different documents from different origin servers.

1 36. The method of claim 1, 17, or 21 in which the
2 subdocuments are derived from the document at a wireless
3 communication gateway.

1 37. Apparatus comprising
2 a network server configured to receive a machine readable
3 file containing a document that is to be served to a client for
4 display on a client device, and to derive subdocuments from the
5 file, each of the subdocuments being expressed in a format that
6 permits it to be served separately to the client using a hypertext
7 transmission protocol, at least one of the subdocuments containing
8 information that enables it to be linked to another one of the
9 subdocuments.

1 38. Apparatus comprising

2 means for receiving a machine readable file containing a
3 document that is to be served to a client for display on a client
4 device, and

5 means for deriving subdocuments from the file, each of the
6 subdocuments being expressed in a format that permits it to be
7 served separately to the client using a hypertext transmission
8 protocol, at least one of the subdocuments containing information
9 that enables it to be linked to another one of the subdocuments.

1 39. A machine-readable program stored on a machine-readable
2 medium and capable of configuring a machine to

3 receive a machine readable file containing a document that
4 is to be served to a client for display on a client device, and

5 derive subdocuments from the file, each of the
6 subdocuments being expressed in a format that permits it to be
7 served separately to the client using a hypertext transmission
8 protocol, at least one of the subdocuments containing information
9 that enables it to be linked to another one of the subdocuments.